

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**PETITION NO. 27/TT/2014**

**Coram:  
Shri A. S. Bakshi, Member  
Dr. M. K. Iyer, Member**

**Date of Hearing: 23.11.2015  
Date of Order: 30.12.2015**

**In the Matter of:**

Determination of transmission tariff for (A) LILO of N`Sagar- Gooty 400kV S/C line at Kurnool (New) substation, (B) Kurnool (New) – Kurnool (APTRANSCO) 400kV D/C quad line, (C) Establishment of new 765/400kV substation at Kurnool with 2x1500 MVA transformers, (D) Extension of Kurnool (APTRANSCO) substation and (E) 1x240 MVAR bus reactor at Kurnool (new) substation under “Transmission System associated with Krishnapatnam UMPP part C1” in Southern Region for tariff block 2014-19 under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations 1999, and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2014

**And in the Matter of:**

Power Grid Corporation of India Ltd,  
SAUDAMINI, Plot No.-2, Sector-29,  
Gurgaon-122001 (Haryana)

**.....Petitioner**

**Versus**

1. Karnataka Power Transmission Corporation Ltd., (KPTCL),  
Kaveri Bhavan, Bangalore – 560 009
2. Transmission Corporation of Andhra Pradesh Ltd.,  
(APTRANSCO), Vidyut Soudha, Hyderabad – 500082
3. Kerala State Electricity Board (KSEB)  
Vaidyuthi Bhavanam  
Pattom, Thiruvananthapuram – 695 004
4. Tamil Nadu Generation and Distribution Corporation Ltd  
(Formerly Tamilnadu Electricity Board - TNEB)



NPKRR Maaligai, 800, Anna Salai  
Chennai – 600 002

5. Electricity Department  
Govt of Pondicherry,  
Pondicherry - 605001
6. Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL)  
APEPDCL, P&T Colony,  
Seethmmadhara, VISHAKHAPATNAM  
Andhra Pradesh,
7. Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL)  
Srinivasasa Kalyana Mandapam Backside,  
Tiruchanoor Road, Kesavayana Gunta,  
TIRUPATI - 517 501,  
Chittoor District, Andhra Pradesh
8. Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL)  
Corporate Office, Mint Compound,  
HYDERABAD – 500 063  
Andhra Pradesh
9. Northern Power Distribution Company of Andhra Pradesh Limited (APNPDCL)  
Opp. NIT Petrol Pump  
Chaitanyapuri, Kazipet,  
WARANGAL – 506 004  
Andhra Pradesh
10. Bangalore Electricity Supply Company Ltd., (BESCOM),  
Corporate Office, K.R.Circle  
BANGALORE – 560 001  
Karnataka
11. Gulbarga Electricity Supply Company Ltd., (GESCOM)  
Station Main Road, GULBURGA  
Karnataka
12. Hubli Electricity Supply Company Ltd., (HESCOM)  
Navanagar, PB Road  
HUBLI, Karnataka
13. MESCOM Corporate Office,  
Paradigm Plaza, AB Shetty Circle  
MANGALORE – 575 001  
Karnataka
14. Chamundeswari Electricity Supply Corporation Ltd.,  
(CESC)



# 927,L J Avenue  
Ground Floor, New Kantharaj Urs Road  
Saraswatipuram, MYSORE – 570 009  
KARNATAKA

The following were present:

For Petitioner:       Shri S.K. Niranjana, PGCIL  
                              Shri S.S. Raju, PGCIL  
                              Shri Jasbir Singh, PGCIL  
                              Shri Rakesh Prasad, PGCIL  
                              Shri Anshul Garg, PGCIL  
                              Shri M.M. Mondal, PGCIL  
                              Shri S.K Venkatesan, PGCIL

For Respondents:   None

### **ORDER**

The petition has been preferred by Power Grid Corporation of India Limited (hereinafter referred to as “the petitioner”), a transmission licensee, for determination of tariff under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from 1.4.2014 to 31.3.2019 in respect of (A) LILO of N`Sagar- Gooty 400kV S/C line at Kurnool (New) substation, (B) Kurnool (New) – Kurnool (APTRANSCO) 400kV D/C quad line, (C) Establishment of new 765/400kV substation at Kurnool with 2x1500 MVA transformers, (D) Extension of Kurnool (APTRANSCO) substation and (E) 1x240 MVAR bus reactor at Kurnool (new) substation under “Transmission System associated with Krishnapatnam UMPP part C1” in Southern Region (hereinafter referred to as “the transmission assets”).

2. The respondents are distribution licensees, who are procuring transmission service from the petitioner, mainly beneficiaries of Southern Region.



3. The brief facts of the case are as follows:-

a) Investment Approval for the transmission asset was accorded by Board of Directors of the petitioner company vide Memorandum No. C/CP/KUMPP-C1 dated 17.2.2012 at an estimated cost of ₹32434 lakh including IDC of ₹ 1491 lakh at 4<sup>th</sup> Quarter, 2011 price level.

b) The petitioner filed this Petition initially on 18.2.2014 based on anticipated DOCO as 1.3.2014. However, the transmission assets could not be commissioned as anticipated. The Commission, vide its Order dated 23.6.2014 for Petition 27/TT/2014 awarded provisional tariff for 2014-19 tariff period in respect of the transmission assets

c) The petitioner has vide its affidavit dated 29.5.2014 submitted that the transmission assets have been commissioned on 1.4.2014 and has filed the revised forms for tariff determination.

d) The transmission assets comprise the following elements:

Transmission Line:

- Kurnool (New) - Kurnool (APTRANSCO) Quad Line 400kV
- LILO of N`Sagar- Gooty 400kV, D/C
- LILO of N`Sagar- Gooty 400kV, S/C

Substations:

- 3 No. Bays 765 kV
- 8 No. Bays 400 kV

e) Thus, in this order tariff of the transmission assets are being determined for the period 1.4.2014 to 31.3.2019.

4. The petitioner has served the petition to the respondents and notice of this application has been published in the newspaper in accordance with Section 64 of the Electricity Act 2003. No comments/objections have been received from the public in response to the notice in newspaper. Only TANGEDCO i.e. Respondent No. 4 has filed reply to the petition. Submissions of TANGEDCO are discussed in the relevant heads while determining tariff.

5. The hearing in this matter was held on 23.11.2015. Having heard the representatives of the parties and perused the material on record, we proceed to dispose of the petition.

#### **DETERMINATION OF ANNUAL FIXED CHARGES FOR 2014-19 TARIFF PERIOD**

6. The petitioner has claimed the tariff charges for 2014-19 tariff period as under:-

(₹ in lakh)					
<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	1351.51	1503.16	1518.32	1518.32	1518.32
Interest on Loan	1247.48	1317.44	1244.57	1148.83	1038.02
Return on Equity	1705.85	1908.68	1928.97	1928.97	1928.97
Interest on Working Capital	141.69	152.87	153.47	152.78	151.78
O & M Expenses	771.09	796.68	823.14	850.49	878.66
<b>Total</b>	<b>5217.62</b>	<b>5678.83</b>	<b>5668.47</b>	<b>5599.39</b>	<b>5515.75</b>

7. The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O & M Expenses	64.26	66.39	68.60	70.87	73.22
Maintenance Spares	115.66	119.50	123.47	127.57	131.80
Receivables	869.6	946.47	944.75	933.23	919.29
Total	1049.52	1132.36	1136.82	1131.67	1124.31
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	141.69	152.87	153.47	152.78	151.78

### **Capital Cost**

8. Clause (2) and (6) of Regulation 9 of 2014 Tariff Regulation provide as follows:-

“(2) The Capital Cost of a new project shall include the following:

- (a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- (c) Increase in cost in contract packages as approved by the Commission;
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- (e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- (f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- (g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

“(6) The following shall be excluded or removed from the capital cost of the existing and new project:

- (a) The assets forming part of the project, but not in use; (b) Decapitalisation of Asset;”

9. As per the Auditor's Certificate dated 27.5.2014, actual expenditure upto 31.3.2014 is ₹25083.52 lakh. Further, in response to query of the Commission, the petitioner vide affidavit dated 21.11.2015 has submitted the IDC and IEDC on cash

basis discharged up to the date of commercial operation. The details submitted by the petitioner are as below:

<b>Details of IDC &amp; IEDC discharged up to COD 1.4.2014</b>		
<b>Period</b>	<b>IDC</b>	<b>IEDC</b>
Up to COD	155.48	1658.60
2014-15	227.78	
<b>Total</b>	<b>383.26</b>	<b>1658.60</b>

10. After adjusting the IDC discharged up to COD, the capital cost works out to be ₹24855.74 lakh (₹25083.52 lakh - ₹383.26 lakh + ₹155.48 lakh). This has been considered as opening capital cost as on 1.4.2014 for determination of tariff in accordance with Regulation 9 of the 2014 Tariff Regulations.

11. TANGEDCO vide its reply under affidavit dated 17.4.2014 had pointed out that the anticipated completion cost was more than the approved cost. However, the Petitioner has vide its affidavit dated 29.5.2014 submitted revised data. Based on the above, it is seen that as per the revised data estimated completion cost is less than approved cost.

12. The above cost includes cost of initial spares amounting to ₹477.4 lakh as per Auditor's certificate dated 27.5.2015. The 2014 Tariff Regulations, prescribes ceiling norms of initial spares for the Transmission line, Sub-station (Green Field), Sub-station (Brown Field) and Communication system as 1%, 4%, 6% and 3.5% respectively of the plant and machinery cost. As the cost of initial spares claimed by the petitioner is within the prescribed norms, the same is allowed as such.

#### **Additional Capital Expenditure**

13. Clause (1) of Regulation 14 of the 2014 Tariff Regulations provides as under:-

“(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (i) Undischarged liabilities recognized to be payable at a future date;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and
- (v) Change in law or compliance of any existing law.”

14. Clause 13 of Regulation 3 of the 2014 Tariff Regulations defines

“Cut - off Date” means 31<sup>st</sup> March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of a year, the cut - off date shall be 31<sup>st</sup> March of the year closing after three years of the year of commercial operation:”

15. The petitioner has claimed estimated additional capital expenditure amounting to ₹6012.03 lakh during 2014-15 and ₹668.00 lakh during 2015-16 under Regulation 14(1) of 2014 Tariff Regulations on account of balance and retention payments.

16. The additional capital expenditure is towards balance and retention payments and the total estimated completion cost works out ₹31763.55 lakh which is within the sanctioned cost. Accordingly the additional capital expenditure is allowed.

### **Debt: Equity**

17. Clause (1) and (5) of Regulation 19 of the 2014 Tariff Regulations provide as under:-\*

“19. Debt-Equity Ratio: (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:”



“(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

18. The petitioner has considered the debt:equity ratio of 70:30 as on 31.3.2014, which is in line with the 2014 Tariff Regulations.

19. In respect of the additional capital expenditure, debt:equity ratio of 70:30 has been adopted as mandated by clause (5) read with clause (1) of Regulation 19 of the 2014 Tariff Regulations. The details of the debt:equity considered for the purpose of tariff determination for 2014-19 tariff period is as follows:-

(₹ in lakh)

<b>Funding</b>	<b>Total Cost as on 31.3.2014</b>	<b>(%)</b>	<b>Additional Capital Expenditure during 2014-19</b>	<b>(%)</b>	<b>Total Cost as on 31.3.2019</b>	<b>(%)</b>
Debt	17399.02	70.00	4835.47	70.00	22234.5	70.00
Equity	7456.72	30.00	2072.34	30.00	9529.07	30.00
<b>Total</b>	<b>24855.74</b>	<b>100.00</b>	<b>6907.81</b>	<b>100.00</b>	<b>31763.55</b>	<b>100.00</b>

### **Return on Equity (ROE)**

20. Additional ROE of 0.5% has been claimed by the petitioner in accordance with the time line specified for claiming additional ROE under Regulation 24 of Tariff Regulations 2014. The Commission has observed that the transmission asset has been commissioned within 26 months against the qualifying time schedule of 36 months and thus the additional ROE is allowed.

21. Clause (1) and (2) of Regulations 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations specify as under:-

“24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system”

“25. Tax on Return on Equity:

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.”

22. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during the 2013-14 has been considered for the purpose of ROE, which shall be trued up with actual tax rate in accordance with Clause (3) of Regulation 25 of the 2014 Tariff Regulations. The ROE has been worked out and allowed as follows:-

(₹ in lakh)

<b>Return on Equity</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Equity	7456.72	9328.67	9529.07	9529.07	9529.07
Additions	1871.94	200.40	0.00	0.00	0.00
Closing Equity	9328.67	9529.07	9529.07	9529.07	9529.07
Average Equity	8392.69	9428.87	9529.07	9529.07	9529.07
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
Additional Equity (%)	0.5000	0.5000	0.5000	0.5000	0.5000
MAT Rate for respective year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (%)	20.243	20.243	20.243	20.243	20.243
Return on Equity	1698.94	1908.69	1928.97	1928.97	1928.97

### **Interest on Loan (IoL)**

23. Clause 5 and Clause 6 of Regulation 26 of the 2014 Tariff Regulations provides that:-

“(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.”

24. The weighted average rate of IoL has been considered on the basis of rate prevailing as on 1.4.2014. The petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2014-19 tariff period will be adjusted. This has been objected to by TANGEDCO in its reply under affidavit dated 17.4.2014 stating that there is no specific provision in the 2009 Tariff Regulations for this. As has been already stated the actual date of commercial operation is 1.4.2014 and the tariff is being determined under the 2014 Tariff Regulations. As regards the applicability of floating rate of interest, we notice that the the Commission in its earlier order dated 8.6.2011 in Petition No. 238/2010 has dealt with similar issue and held that:-

“...in case of floating rate of interest, any change in the rates of interest during the tariff period will be considered at the time of true up”.

25. Accordingly, the floating rate of interest, if any, shall be considered at the time of true up or next revision of tariff. By considering above, the IoL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. The details of weighted

average rate of interest for 2014-19 tariff period are placed in Annexure 1 and the IoL has been worked out and allowed as follows:-

(₹ in lakh)

Interest on Loan	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	17399.02	21766.89	22234.49	22234.49	22234.49
Cumulative Repayment upto Previous Year	0.00	1346.00	2849.15	4367.47	5885.79
Net Loan-Opening	17399.02	20420.89	19385.33	17867.01	16348.70
Additions	4367.87	467.60	0.00	0.00	0.00
Repayment during the year	1346.00	1503.15	1518.32	1518.32	1518.32
Net Loan-Closing	20420.89	19385.33	17867.01	16348.70	14830.38
Average Loan	18909.95	19903.11	18626.17	17107.85	15589.54
Weighted Average Rate of Interest on Loan (%)	6.5702	6.6211	6.6838	6.7174	6.6608
Interest on Loan	1242.42	1317.81	1244.93	1149.21	1038.39

### **Depreciation**

26. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provide that:-

"27. Depreciation:

...(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis"

"(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets."

27. The depreciation has been worked out considering the admitted capital expenditure as on 31.3.2014 and accumulated depreciation up to 31.3.2014. The transmission assets will be completing 12 years beyond the current tariff period viz. 2014-19. Hence the remaining depreciable value is spread over the balance useful life of the transmission assets. The detailed calculations for depreciation for the transmission assets are worked out and allowed as follows:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Depreciation</b>					
Opening Gross Block	24855.74	31095.55	31763.55	31763.55	31763.55
Additional Capitalization	6239.81	668.00	0.00	0.00	0.00
Closing Gross Block	31095.55	31763.55	31763.55	31763.55	31763.55
Average Gross Block	27975.65	31429.55	31763.55	31763.55	31763.55
Freehold Land (Av. Cost)	0.00	11.26	11.26	11.26	11.26
Rate of Depreciation (%)	4.81	4.78	4.78	4.78	4.78
Elapsed life	0	1	2	3	4
Balance Useful life of the asset	28	27	26	25	24
Remaining Depreciable Value	25178.08	26940.60	25738.04	24219.72	22701.41
Depreciation during the year	1346.00	1503.15	1518.32	1518.32	1518.32

### **Operation & Maintenance Expenses (O&M Expenses)**

28. Clause 3(a) of Regulation 29 of the 2014 Tariff Regulations specify the norms for O&M Expenses for the transmission system. The total allowable O&M Expenses for the instant assets have been worked out and allowed are as follows:-

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>765 kV Bays:</b>					
No. of Bays	3	3	3	3	3
Norms (₹ lakh/Bay)	84.42	87.22	90.12	93.11	96.2
<b>400 kV Bays</b>					

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
No. of Bays	8	8	8	8	8
Norms (` lakh/Bay)	60.3	62.3	64.37	66.51	68.71
<b>Line: S/C Twin/Triple Conductor:</b>					
Line Length (km)	0.629	0.629	0.629	0.629	0.629
Norms (` lakh/km)	0.404	0.418	0.432	0.446	0.461
<b>Line: D/C Bundled( 4 or more sub conductor):</b>					
Line Length (km)	9.881	9.881	9.881	9.881	9.881
Norms (` lakh/km)	1.062	1.097	1.133	1.171	1.21
<b>Line: D/C Twin/Triple Conductor:</b>					
Line Length (km)	34.905	34.905	34.905	34.905	34.905
Norms (` lakh/km)	0.707	0.731	0.755	0.780	0.806
<b>Total O&amp;M Expenses (` lakh)</b>	<b>771.09</b>	<b>796.68</b>	<b>823.14</b>	<b>850.49</b>	<b>878.66</b>

29. The petitioner has further submitted that the wage revision of the employees of the petitioner company is due during 2014-19 and actual impact of wage hike which will be effective from a future date has also not been factored in fixation of the normative O&M rate specified for the 2014-19 tariff period. The petitioner has also prayed that it will approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase. This prayer of the petitioner has been objected to by TANGEDCO on the ground that there is no provision in the Regulations for revision of normative O&M expenses based on actuals.

30. We would like to clarify that any application filed by the petitioner for revision of O&M Expenses on account of wage revision will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations. The O&M Expenses are allowed for the instant transmission asset as per prevailing norms.

### **Interest on Working Capital (IWC)**

31. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specifies as follows:

**“28. Interest on Working Capital**

- (c) (i) Receivables equivalent to two months of fixed cost;
- (ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and
- (iii) Operation and maintenance expenses for one month”

“(5) ‘Bank Rate’ means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;”

32. The petitioner has submitted that it has computed interest on working capital for the tariff block 2014-19 considering the SBI Base Rate plus 350 basis points as on 1.4.2014. The rate of interest on working capital considered is 13.50%.

33. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). The components of the working capital and interest thereon have been worked as follows:-

(₹ in lakh)

<b>Interest on Working Capital</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M expenses	64.26	66.39	68.60	70.87	73.22
Maintenance Spares	115.66	119.50	123.47	127.57	131.80
Receivables	866.62	946.53	944.81	933.30	919.36
Total	1046.54	1132.43	1136.87	1131.74	1124.38
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	141.28	152.88	153.48	152.79	151.79

## **ANNUAL FIXED CHARGES FOR THE 2014-19 TARIFF PERIOD**

34. The transmission charges allowed for the instant transmission assets for the 2014-19 tariff period are summarised below:-

(₹ in lakh)					
<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Depreciation</b>					
Opening Gross Block	24855.74	31095.55	31763.55	31763.55	31763.55
Additional Capitalisation	6239.81	668.00	0.00	0.00	0.00
Closing Gross Block	31095.55	31763.55	31763.55	31763.55	31763.55
Average Gross Block	27975.65	31429.55	31763.55	31763.55	31763.55
Rate of Depreciation (%)	4.81	4.78	4.78	4.78	4.78
Depreciable Value	25178.08	31084.38	28877.66	28577.06	28577.06
Balance useful life of the asset	28	27	26	25	24
Elapsed life	0	1	2	3	4
Remaining Depreciable Value	25178.08	26940.60	25738.04	24219.72	22701.41
Depreciation during the year	1346.00	1503.15	1518.32	1518.32	1518.32
Cumulative depreciation (incl. of AAD)	1346.00	2849.15	4367.47	5885.79	7404.11
<b>Interest on Loan</b>					
Gross Normative Loan	17399.02	21766.89	22234.49	22234.49	22234.49
Cumulative Repayments upto Previous Year	0.00	1346.00	2849.15	4367.47	5885.79
Net Loan-Opening	17399.02	20420.89	19385.33	17867.01	16348.70
Additions	4367.87	467.60	0.00	0.00	0.00
Repayment during the year	1346.00	1503.15	1518.32	1518.32	1518.32
Net Loan-Closing	20420.89	19385.33	17867.01	16348.70	14830.38
Average Loan	18909.95	19903.11	18626.17	17107.85	15589.54
Weighted Average Rate of Interest on Loan (%)	6.5702	6.6211	6.6838	6.7174	6.6608
Interest on Loan	1242.42	1317.81	1244.93	1149.21	1038.39
<b>Return on Equity</b>					
Opening Equity	7456.72	9328.67	9529.07	9529.07	9529.07
Additions	1871.94	200.40	0.00	0.00	0.00
Closing Equity	9328.67	9529.07	9529.07	9529.07	9529.07
Average Equity	8392.69	9428.87	9529.07	9529.07	9529.07
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (%)	20.9605	20.9605	20.9605	20.9605	20.9605
Rate of Return on Equity (%)	20.2430	20.2430	20.2430	20.2430	20.2430
Return on Equity	1698.94	1908.69	1928.97	1928.97	1928.97
<b>Interest on Working Capital</b>					



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O & M Expenses	64.26	66.39	68.60	70.87	73.22
Maintenance Spares	115.66	119.50	123.47	127.57	131.80
Receivables	866.62	946.53	944.81	933.30	919.36
Total Working Capital	1046.54	1132.43	1136.87	1131.74	1124.38
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest of working capital	141.28	152.88	153.48	152.79	151.79
<b>Annual Transmission Charges</b>					
Depreciation	1346.00	1503.15	1518.32	1518.32	1518.32
Interest on Loan	1242.42	1317.81	1244.93	1149.21	1038.39
Return on Equity	1698.94	1908.69	1928.97	1928.97	1928.97
Interest on Working Capital	141.28	152.88	153.48	152.79	151.79
O & M Expenses	771.09	796.68	823.14	850.49	878.66
<b>Total</b>	<b>5199.72</b>	<b>5679.21</b>	<b>5668.84</b>	<b>5599.77</b>	<b>5516.13</b>

### **Deferred Tax Liability**

35. The petitioner has sought recovery of deferred tax liability before 1.4.2009 from the beneficiaries or long term consumers/ DICs as and when materialized. The deferred tax liability shall be dealt as per Regulations 49 of the 2014 Tariff Regulations, as amended. Accordingly, the petitioner is entitled to recover the deferred tax liability upto 31.3.2009 whenever the same gets materialized directly from the beneficiaries or long term transmission customers /DICs.

### **Filing Fee and the Publication Expenses**

36. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 52 (1) of the 2014 Tariff Regulations.

### **Licence Fee & RLDC Fees and Charges**

37. The petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 52 (2) (b) of the 2014 Tariff Regulations for 2014-19 tariff period. The petitioner shall also be entitled for recovery of RLDC fee & charges in accordance with Regulations 52 (2) (a) of the 2014 Tariff Regulations for 2014-19 tariff period.

### **Service Tax**

38. The petitioner has prayed for reimbursement of service tax if it is subjected to such tax in future. This has been objected to be TANGEDCO citing the exemption granted to transmission services. We are of the view that the petitioner's prayer as well as the objection by the Respondent are premature.

### **Foreign Exchange Rate Variation**

39. The petitioner has sought recovery of FERV on foreign loans deployed under clause 50 of 2014 Tariff Regulations. The petitioner is entitled to recover the FERV directly from the beneficiaries or the long term transmission customers / DICs, as the case may be, in accordance with Regulation 51(1) of the 2014 Tariff Regulations

### **Sharing of Transmission Charges**

40. TANGEDCO in its reply under affidavit dated 17.4.2014 has pointed out that originally the transmission assets were proposed as ATS of Krishnapatnam UMPP and therefore the transmission charges are to be recovered from the beneficiaries of the above UMPP rather than the Southern Region constituents. However, the Petitioner vide its rejoinder under affidavit dated 17.12.2015 has clarified that by the time the transmission asset was commissioned on 1.4.2014, Point of Connection mechanism of sharing of transmission charges was already applicable and therefore the sharing of the

transmission charges has to be done under the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010.

41. We direct that the billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time as provided in Regulation 43 of the 2014 Tariff Regulations.

42. This order disposes of Petition No. 27/TT/2014.

**Sd/-**  
**(Dr. M.K. Iyer)**  
**Member**

**Sd/-**  
**(A.S. Bakshi)**  
**Member**

**Annexure – 1**

**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

(₹ in lakh)

<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>IBRD V-LOAN 9-60.61</b>					
Gross Opening Loan	6515.00	6515.00	6515.00	6515.00	6515.00
Cumulative Repayments of Loans upto Previous Year	0.00	117.92	355.72	596.12	839.13
Net Loans Opening	6515.00	6397.08	6159.28	5918.88	5675.87
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	117.92	237.80	240.40	243.01	244.31
Net Closing Loan	6397.08	6159.28	5918.88	5675.87	5431.56
Average Net Loan	6456.04	6278.18	6039.08	5797.38	5553.72
Rate of Interest on Loan (%)	1.61	1.61	1.61	1.61	1.61
Interest on Loan	103.94	101.08	97.23	93.34	89.41
<b>BOND XXXVIII-LOAN 1-</b>					
Gross Opening Loan	100.00	100.00	100.00	100.00	100.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	0.00
Net Loans Opening	100.00	100.00	100.00	100.00	100.00
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	0.00	0.00
Net Closing Loan	100.00	100.00	100.00	100.00	100.00
Average Net Loan	100.00	100.00	100.00	100.00	100.00
Rate of Interest on Loan (%)	9.25	9.25	9.25	9.25	9.25
Interest on Loan	9.25	9.25	9.25	9.25	9.25
<b>SBI (21.03.2012)-LOAN 5-</b>					
Gross Opening Loan	711.00	711.00	711.00	711.00	711.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	64.64	129.28
Net Loans Opening	711.00	711.00	711.00	646.36	581.72
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	64.64	64.64	64.64
Net Closing Loan	711.00	711.00	646.36	581.72	517.08
Average Net Loan	711.00	711.00	678.68	614.04	549.40
Rate of Interest on Loan (%)	10.25	10.25	10.25	10.25	10.25



<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Interest on Loan	72.88	72.88	69.56	62.94	56.31
<b>BOND XL-LOAN 2-</b>					
Gross Opening Loan	98.00	98.00	98.00	98.00	98.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	8.17	16.34
Net Loans Opening	98.00	98.00	98.00	89.83	81.66
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	8.17	8.17	8.17
Net Closing Loan	98.00	98.00	89.83	81.66	73.49
Average Net Loan	98.00	98.00	93.92	85.75	77.58
Rate of Interest on Loan (%)	9.30	9.30	9.30	9.30	9.30
Interest on Loan	9.11	9.11	8.73	7.97	7.21
<b>BOND XLI-LOAN 3-</b>					
Gross Opening Loan	18.00	18.00	18.00	18.00	18.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	1.50	3.00
Net Loans Opening	18.00	18.00	18.00	16.50	15.00
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	1.50	1.50	1.50
Net Closing Loan	18.00	18.00	16.50	15.00	13.50
Average Net Loan	18.00	18.00	17.25	15.75	14.25
Rate of Interest on Loan (%)	8.85	8.85	8.85	8.85	8.85
Interest on Loan	1.59	1.59	1.53	1.39	1.26
<b>BOND XLII-LOAN 4-</b>					
Gross Opening Loan	1340.00	1340.00	1340.00	1340.00	1340.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	0.00
Net Loans Opening	1340.00	1340.00	1340.00	1340.00	1340.00
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	0.00	0.00
Net Closing Loan	1340.00	1340.00	1340.00	1340.00	1340.00
Average Net Loan	1340.00	1340.00	1340.00	1340.00	1340.00
Rate of Interest on Loan (%)	8.80	8.80	8.80	8.80	8.80
Interest on Loan	117.92	117.92	117.92	117.92	117.92
<b>BOND XLIII-LOAN-6-</b>					

<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Opening Loan	824.00	824.00	824.00	824.00	824.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	68.67
Net Loans Opening	824.00	824.00	824.00	824.00	755.33
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	68.67	68.67
Net Closing Loan	824.00	824.00	824.00	755.33	686.66
Average Net Loan	824.00	824.00	824.00	789.67	721.00
Rate of Interest on Loan (%)	7.93	7.93	7.93	7.93	7.93
Interest on Loan	65.34	65.34	65.34	62.62	57.17
<b>BOND XLIV -LOAN-7-</b>					
Gross Opening Loan	1769.00	1769.00	1769.00	1769.00	1769.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	0.00
Net Loans Opening	1769.00	1769.00	1769.00	1769.00	1769.00
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	0.00	589.67
Net Closing Loan	1769.00	1769.00	1769.00	1769.00	1179.33
Average Net Loan	1769.00	1769.00	1769.00	1769.00	1474.17
Rate of Interest on Loan (%)	8.70	8.70	8.70	8.70	8.70
Interest on Loan	153.90	153.90	153.90	153.90	128.25
<b>BOND XLV-LOAN 8-</b>					
Gross Opening Loan	3000.00	3000.00	3000.00	3000.00	3000.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	250.00
Net Loans Opening	3000.00	3000.00	3000.00	3000.00	2750.00
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	250.00	250.00
Net Closing Loan	3000.00	3000.00	3000.00	2750.00	2500.00
Average Net Loan	3000.00	3000.00	3000.00	2875.00	2625.00
Rate of Interest on Loan (%)	9.65	9.65	9.65	9.65	9.65
Interest on Loan	289.50	289.50	289.50	277.44	253.31
<b>PROPOSED LOAN 2014-15 (10.25%)-LOAN 11-</b>					
Gross Opening Loan	3183.47	3183.47	3183.47	3183.47	3183.47

<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	0.00
Net Loans Opening	3183.47	3183.47	3183.47	3183.47	3183.47
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	0.00	265.29
Net Closing Loan	3183.47	3183.47	3183.47	3183.47	2918.18
Average Net Loan	3183.47	3183.47	3183.47	3183.47	3050.83
Rate of Interest on Loan (%)	10.25	10.25	10.25	10.25	10.25
Interest on Loan	326.31	326.31	326.31	326.31	312.71
Summary					
Gross Opening Loan	17558.47	17558.47	17558.47	17558.47	17558.47
Cumulative Repayments of Loans upto Previous Year	0.00	117.92	355.72	670.43	1306.42
Net Loans Opening	17558.47	17440.55	17202.75	16888.04	16252.05
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	117.92	237.80	314.71	635.99	1492.25
Net Closing Loan	17440.55	17202.75	16888.04	16252.05	14759.80
Average Net Loan	17499.51	17321.65	17045.40	16570.05	15505.93
Rate of Interest on Loan (%)	6.5702	6.6211	6.6838	6.7174	6.6608
Interest on Loan	1149.75	1146.89	1139.28	1113.08	1032.82